PART I - ADMINISTRATIVE

Section 1. General administrative information

Title of project

Rehabilitate Newsome Creek - S.F. Clearwater River

BPA project number: 20086
Contract renewal date (mm/yyyy): 3/2000 ☐ **Multiple actions?**

Business name of agency, institution or organization requesting funding
Nez Perce Fisheries/Watershed Program

Business acronym (if appropriate) NPT

Proposal contact person or principal investigator:

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NPPC Program Measure Number(s) which this project addresses
Section 7.6 - Habitat goals, policies, and objectives; Section 7-7 Cooperative havitat protection and improvement with private landowners; Section 7-8 Implement state, federal, and tribal habitat improvements.

FWS/NMFS Biological Opinion Number(s) which this project addresses
Land and Resource Management Plans for Natioanl Forest, Bureau of Land Management Resource Areas in the Upper Columbia Basins and Snake River Basin Evolutionarily Significant Units, 1998.

Other planning document references
Bonneville Power Administration, 1997. Watershed Management Program: Final Environmental Impact Statement.

Columbia Basin Fish and Wildlife Authority, 1997. Intergrated Watershed Projects: The Process and Criteria for Selecting Watershed Projects for the Columbia Basin Fish & Wildlife Program.

Columbia River Fish & Wildlife Program, 1994. Columbia River Basin Fish & Wildlife Program

CRITFC, 1995. WY-KAN-USH-MI-WA-KISH-WIT, Spirits of the Salmon, Volume I & II. Portland, OR.

Nez Perce Tribe and Idaho Department of Fish & Game, 1990. Clearwater River Subbasin Salmon and Steelhead Production Plan. Power Planning Council & CBFWA. Boise, ID.

USDA Forest Service - Nez Perce National Forest, 1998. South Fork Clearwater River Landscape Assessment, Volume I & II. Idaho County, ID.

Short description
Protect and enhance Newsome Creek watershed for the benefit of both resident and anadromous fish. This will be accomplished using an overall watershed approach.

Target species
Targeted species include A-run steelhead, Spring Chinook, and bull trout.

Section 2. Sorting and evaluation

Subbasin
Clearwater River Subbasin

Evaluation Process Sort

CBFWA caucus	Special evaluation process	ISRP project type
Mark one or more caucus	If your project fits either of these processes, mark one or both	Mark one or more categories
☒ Anadromous fish ☐ Resident fish ☐ Wildlife	☒ Multi-year (milestone-based evaluation) ☒ Watershed project evaluation	☐ Watershed councils/model watersheds ☐ Information dissemination ☐ Operation & maintenance ☐ New construction ☐ Research & monitoring ☒ Implementation & management ☐ Wildlife habitat acquisitions

Section 3. Relationships to other Bonneville projects

Umbrella / sub-proposal relationships. List umbrella project first.

Project #	Project title/description

Other dependent or critically-related projects

Project #	Project title/description	Nature of relationship
9608600	Clearwater Watershed Coordinator - Idaho Soil and Conservation District	Coordinate all projects within the Clearwater Subbasin.
8335000	Nez Perce Tribal Hatchery	Watershed protection and restoration for anadromous fish.
9600600	Clearwater Watershed Coordinator - Nez Perce Tribe	Coordinate all projects within the Clearwater Subbasin.
9901600	Protect and Restore Big Canyon Watershed	was in umbrella table
9607711	Restore McComas Meadows/Meadow Creek Watershed	was in umbrella table
9607708	Protect and Restore Lolo Creek Watershed	was in umbrella table
9607709	Protect and Restore Squaw to Papoose Watersheds	was in umbrella table
9901700	Protect and Restore Lapwai Creek Watershed	was in umbrella table
20087	Protect & Restore Mill Creek	was in umbrella table
20085	Analyse & Improve Fish Screen	was in umbrella table
	Focus Watershed Coordinator	was in umbrella table
20084	Protect & Restore the North Lochsa Face Analysis Area Watersheds	was in umbrella table

Section 4. Objectives, tasks and schedules

Past accomplishments

Year	Accomplishment	Met biological objectives?
1996	Created a sediment trap and revegetated placer mine.	Yes, but revegetation will take a long time to take a hold.
1989	U.S. Forest Service placed instream structures in Newsome Creek.	Yes, but other problems were not addressed that are discussed in the narrative.

Objectives and tasks

Obj 1,2,3	Objective	Task a,b,c	Task
1	Alleviate sediment input and potential input from road sources.	a	Consult with the Nez Perce National Forest (NPNF) on roads for survey

			inventory and 10 miles to be obliterated.
		b	Perform all pre-work needs, training, and logistics internally and the NPNF.
		c	Consult with the NPNF on any necessary environmental analysis - Categorical exclusion within the Newsome Creek Watershed.
		d	Obliterate 10 miles of roads.
		e	Survey additional roads to be obliterated in future years.
		f	Provide erosion control crew to re-vegetate obliterated roads.
2	Perform monitoring and evaluation of road obliteration.	a	Measure sediment delivery into stream.
		b	Use photopoints to determine revegetation success.
		c	Measure changes in hydrological conditions of the watershed.
		d	Monitor road obliteration at the stream crossing sights.
3	Design rehabilitation for the upper channel reaches affected by past dredge mining.	a	Subcontract to complete feasibility study on channel restructuring.
		b	Use study to determine whether project is worth the costs.
4	Disseminate information about work in the watershed.	a	Write quarterly and annual reports.
		b	Write proposals for future project years.
		c	Prepare and deliver presentations to peers and public.
		d	Consult, update, and finalize Cost Share Agreement with NPNF.

Objective schedules and costs

Obj #	Start date mm/yyyy	End date mm/yyyy	Measureable biological objective(s)	Milestone	FY2000 Cost %
1	5/2000	9/2000		X	35.00%
2	5/2000	10/2000		X	10.00%
3	6/2000	10/2000		X	45.00%
4	3/2000	12/2000		X	10.00%

				Total	100.00%

Schedule constraints
Existing schedules for the FY2000 budget may change due to weather conditions. All on the ground projects occur in mountainous areas at elevation up to 5500 feet above sea level, where upredictable weather patterns may occur.

Completion date
A five year plan is to be developed for watershed work within the analysis area.

Section 5. Budget

FY99 project budget (BPA obligated): $0

FY2000 budget by line item

Item	Note	% of total	FY2000
Personnel		%12	45,000
Fringe benefits		%3	9,200
Supplies, materials, non-expendable property		%1	4,700
Operations & maintenance		%0	
Capital acquisitions or improvements (e.g. land, buildings, major equip.)		%0	
NEPA costs		%0	
Construction-related support		%0	
PIT tags	# of tags:	%0	
Travel		%3	11,000
Indirect costs		%5	19,825
Subcontractor		%70	255,000
Other	vehicle costs	%5	20,000
TOTAL BPA FY2000 BUDGET REQUEST			$364,725

Cost sharing

Organization	Item or service provided	% total project cost (incl. BPA)	Amount ($)
Nez Perce National Forest	Technical expertise, watershed assessment.	%18	80,000
		%0	
		%0	

		%0	
		Total project cost (including BPA portion)	$444,725

Outyear costs

	FY2001	FY02	FY03	FY04
Total budget	$401,198	$441,318	$485,450	$533,995

Section 6. References

Watershed?	Reference
☐	Columbia Basin Fish and Wildlife Authority, 1997. Intergrated Watershed Projects: The Process and Criteria for Selecting Watershed Projects for the Columbia Basin Fish & Wildlife Program.
☐	Columbia River Fish & Wildlife Program, 1994. Columbia River Basin Fish & Wildlife Program
☐	CRITFC, 1995. WY-KAN-USH-MI-WA-KISH-WIT, Spirits of the Salmon, Volume I & II. Portland, OR.
☐	Harrelson, Cheryl, et al. 1994. Stream Channel Reference Sites: An Illustrated Guide to Field Technique. General Technical Report RM-245.
☐	Nez Perce Treaty of 1855, 1855. Treaty of 1855 between the Nez Perce Tribe and the United States Federal Government.
☐	Nez Perce Tribe and Idaho Department of Fish & Game, 1990. Clearwater River Subbasin Salmon and Steelhead Production Plan. Power Planning Council & CBFWA. Boise, ID.
☐	Rosgen, Dave. 1996. Applied River Morphology. Pagosa Springs, CO
☐	Steward, Cleveland. 1996. Monitoring and Evaluation Plan for the Nez Perce Tribal Hatchery.
☐	USDA Forest Service - Nez Perce National Forest, 1998. South Fork Clearwater River Landscape Assessment, Volume I & II. Idaho County, ID.
☐	USDA Forest Service - Nez Perce National Forest, 1995. Ecosystem Analysis at the Watershed Scale. Federal Guide for Watershed Analysis. Version 2.2. August, 1995.

PART II - NARRATIVE

Section 7. Abstract

Newsome Creek has historically had a healthy run of anadromous fish, both salmon and steelhead, as well as resident fish populations within the watershed. Due to man's impacts on the land and stream, these numbers have plummeted to dangerously low levels. These activities include road building in both the uplands and the riparian area, excess timber harvest, and mining activities in and out of the stream. The Nez Perce

Tribal Hatchery (NPTH) has begun efforts to rebuild the salmon population by supplementing spring salmon population within the drainage. The current habitat problems must be addressed in order to contribute to the success of these supplementation efforts. We will work with the U.S. Forest Service and private landowners to create an interagency workgroup to pool resources for the benefit of the watershed. Within section 7.6 of the Columbia River Fish & Wildlife Plan, coordinated, cooperative efforts to protect salmon and steelhead habitat within the basins are needed. Our proposal is organized to meet this objective. We will first address the highest ranked limiting factor of excess sediment input from the uplands while simultaneously monitoring hydrological function of the stream as well. Monitoring will be done using Rosgen stream survey's to access hydrological functions, snorkel counts to document juvenile survival, and redd counts to document adult spawning success. These activities will be discussed in detail within the next section of this document.

Section 8. Project description

a. Technical and/or scientific background

Newsome Creek and its tributaries encompass approximately 48,000 acres within the South Fork of the Clearwater River. This watershed has a very high habitat potential for both anadromous and resident fish with the spawning occurring in the upper reaches and the lower section providing important subadult/adult rearing habitat for fish (USDA Forest Service, 1998). Aquatic processes and conditions have been altered from historic levels, primarily the stream/riparian and sediment regimes. The Newsome area has had a considerable amount of management activities within its boundaries. Most of the mainstem channel, and some tributaries, have had historic mining that affected stream and riparian processes negatively. Unfortunately, most of these impacts occurred in the lower gradient sections, which provide the best habitat for spawning and rearing. The end result of the dredging was to convert extremely complex aquatic ecosystems into simplified, unproductive, confined stream channels (USDA Forest Service, 1998). By the 1960's more than 24 million cubic yards of material, along 30 miles of stream had been dredged in the subbasin. These activities have altered the riparian area by destroying the canopy and placing tailing piles within that previously vegetated area, which are not revegetating. Additionally, a road parallels the mainstem and encroaches upon the stream/riparian processes in sections. In the uplands there has been about 8,000 acres of timber harvest within the watershed that has created 220 miles of transportation roads (USDA Forest Service, 1998). These 220 miles constitute a 3.3 miles of road per square mile, which gives it a high road density according to the 1992 Nez Perce National Forest (NPNF) coarse filter watershed condition analysis. This analysis considered watershed sensitivity, disturbance indicators, and the condition of streams relative to Forest Plan objectives (USDA Forest Service, 1998). The current sediment yield within the watershed is 13% over natural base. The basic pattern is that the sediment peaks resulting from wildfire are of similar magnitude as the development era peaks, but that the chronic sediment yield between peaks has been progressively increasing since roading began. A second area of concern that is related to past management activities is water temperature. The Biological Assessment for the South Fork Clearwater River discusses water

temperature as one the limiting factors for salmonids (USDA Forest Service, 1995). Water temperature is primarily affected by channel morphology, streamflow, solar radiation, and ambient air temperature. The most sensitive channels to high summer temperatures are wide, shallow streams with poor shade cover from riparian vegetation or topographic shading. These conditions have been caused or exacerbated by human activities, such as grazing, dredge mining, road placements, riparian timber harvest, etc. (USDA Forest Service, 1998). Water temperature in Newsome creek has been increased by stream channelizing, decreased width to depth ratio, and a sevelrey reduced riparian canopy. These conditions need to be addressed in order to make this a productive habitat for both anadromous and resident fish, not to mention the re-establishment of a normative hydrological function.

Stream monitoring and typing allows us to track changes over time as well as determine what rehabilitation will work more efficiently in specific reaches. We will also be able to work with fish habitat needs as they relate to specific channel types. Stream monitoring and typing began in 1988 by the Nez Perce National Forest. The monitoring includes flow rates, substrate, entrenchment, width to depth ratio, sinuosity, gradient, and turbidity. Newsome Creek has two distinct sections, the upper and lower reaches. The upper reach includes much of the spawning habitat, while the lower reach includes important subadult/adult rearing habitat. This shows that the distribution of species within the watershed is from top to bottom because of multiple age class usage, much like that of all other streams in the Pacific Northwest. The upper watershed contains B – C type channels, based on Rosgen's classification system, while the lower watershed is more narrowly focused on the B channel types. The difference between the two channel types is not a large one but there are some differences nonetheless. B-type channels generally have a moderate gradient, are riffle dominated, with infrequently spaced pools, and are moderately entrenched. C-type channels include low gradients, are meandering, point-bar, riffle/pool, alluvial channels with broad, well-defined floodplains (Rosgen, 1996). The main differences seem to be in the gradient and channel makeup. The B channels are composed of basically a riffle profile while the C channels have a pool component included in their structure. This information allows us to choose locations within the watershed that will help show us the affects of our rehabilitation as well as the affects of land management activities.

b. Rationale and significance to Regional Programs

The restoration efforts in Newsome Creek are focused on providing healthy habitat for anadromous fish. This concept is included in multiple documents including; Nez Perce Tribal Hatchery (NPTH), the Tribal Recovery Program (Spirit of the Salmon), Columbia Basin System Production Plan for Salmon and Steelhead, and the Columbia River Basin Fish and Wildlife Program. Each of these documents will be discussed in detail within this section.

The *Nez Perce Tribal Hatchery's* primary goal is to supplement fish numbers to help re-establish natural populations of Chinook salmon in the Clearwater subbasin until natural production has stabilized at sustainable levels (Steward,1996). A portion of the

768,00 spring Chinook reared at Cherrylane facility will be released as fingerlings in the autumn within the Newsome Creek watershed (Steward, 1996). These supplementation activities rely heavily on habitat quality as well as water quality. Our work within the Newsome Creek Watershed is designed to improve fish habitat andmeet the needs of NPTH.

The second regional document is *Wy-Kan-Ush-Mi-Wa-Kish-Wit, The Spirit of the Salmon*, which is the fish restoration plan of the four Columbia River Tribes. The goals for fish restoration focus on putting fish back into the rivers and tributaries but one of the goals emphasizes using strategies that rely on natural production and healthy river systems to achieve the restoration activities of the tribes (CRITFC, 1995). Putting fish back into river and stream systems alone are not enough to restore their populations, they need a healthy system to return, spawn, and rear in. Our proposal will mitigate (in place, in kind) losses due to mans activities that have adversely affected the watershed.

The *Clearwater River Subbasin Salmon and Steelhead Production Plan* (CRP) discusses the habitat protection needs, constraints and opportunities for establishing production objectives, and anadromous fish production plans. Production constraints for natural spring Chinook salmon in the Clearwater River Subbasin include sedimentation problems, lack of instream cover, and quantity or quality of rearing and/or spawning habitat are major problems, especially in areas of past forestry and/or mining activities (CRP, 1990). Both of these activities have been factors in shaping the problems that the watershed and fish are facing. The habitat objectives include protecting and/or enhancing habitat in streams used or potentially used by anadromous fish to enable optimum production and provide adequate conditions for the spawning, incubation, rearing, and migrating life stages of anadromous fish (CRP, 1990).

The final regional plan is the *Columbia River Basin Fish & Wildlife Program* (CRBFWP). Habitat restoration (section 7) is a large part of the plan because habitat quality improvements are needed to increase the productivity of many stocks. Reduced habitat quality results in lower survival during critical spawning, incubation, rearing and migration periods, even when population densities are low (CRBFWP, 1994). The improvement of habitat will allow greater juvenile and adult survival at each freshwater stage. Anadromous fish spend from one to three years of their life cycle in freshwater as juveniles and several months as adults. During these freshwater stages human activities have the greatest impact on the survival of these populations (CRBFWP, 1994). The Council believes the best approach to watershed restoration is for activities to be cooperative between federal, state, private and tribal agencies. “Furthermore, if watershed restoration is to be successful, instream restoration should be accompanied by riparian and upslope restoration. Positive actions taken to rehabilitate watersheds in the interest of rescuing and restoring salmon and steelhead stocks will result in long-term benefits to other basin resources dependent on watershed health” (CRBFWP, 1994).

c. Relationships to other projects

The Idaho Salmon Supplementation Studies, Project Number #8909802, is a project that is funded by BPA and has direct ties to the Newsome Creek Watershed. In 1998, this project was awarded $233,000 and $339,334 in 1999 by BPA. Newsome Creek has been apart of this project plan since 1991, when it began, and is projected to year 2007 and possibly 2015. The Idaho Salmon Supplementation Studies is a cooperative research project of the Idaho Fish and Game, the NPT, Shoshone-Bannock Tribes, and the U.S. Fish and Wildlife Service to test supplementation on an experimental basis. In order for this project to be successful, habitat conditions for fish need to be as beneficial as possible. Sedimentation is presently occurring and the potential from further landslides by roads is great. Restoration work by this project proposal targets alleviating the potential for further habitat degradation in these supplementation streams by reducing road-derived damage.

Newsome Creek has been selected to supplement spring Chinook within the Nez Perce Tribal Hatchery (NPTH) plans. There is a permanent hatchery sight located on Sweetwater Creek, which incubates fall and spring Chinook and coho salmon for release into many streams including Newsome Creek and its tributaries.

The final relationship is within the watershed program itself that includes many projects within the Clearwater Subbasin. The projects that are to be included under the watershed program are:

- Clearwater Subbasin Focus Watershed Program – Coordinate multiple jurisdictions and government agencies efforts to protect, restore, and enhance fisheries habitat in the Clearwater River subbasin. Coordinate among federal, state, and local government agencies and private landowners in cooperation with the Idaho Soil Conservation Commission Focus Program. Project development will emphasize but not be restricted to lands co-managed by federal agencies and the Nez Perce Tribe in the Clearwater River subbasin. Manage implementation projects to enhance or restore fisheries habitat in selected watersheds.
- Lolo Creek Watershed – Coordinate with Clearwater National Forest to improve spawning and rearing habitat through road obliteration/erosion control activities, coordinate with Potlatch Corporation, State of Idaho, Clearwater National Forest, and private landowners to determine riparian protection/grazing exclusion areas, off-site watering development, and cattleguard placement, and perform monitoring and evaluation of riparian areas as a result of fencing and road obliteration/erosion control.
- Squaw and Papoose Creek Watersheds – Improve spawning and rearing habitat through road obliteration/erosion control activities, and perform monitoring and evaluation of road obliteration and sediment reduction procedures.
- Lapwai Creek Watershed – Complete watershed assessment to justify further work within the watershed, and coordinate with private landowners within proposed work area.
- Big Canyon Creek Watershed – Complete watershed assessment to justify further work within the watershed, and coordinate with private landowners within proposed work area.

- Meadow Creek Restoration–Idaho – Increase understanding of meadow restoration through academic graduate work by comparing low impact vs. aggressive mechanical restoration methods within Meadow Creek and Red River in the South Fork Clearwater River.
- Mill Creek- Construct fence to protect critical spawning habitat within the Mill Creek Watershed.
- North Lochsa Face – Improve spawning and rearing habitat through road obliteration/erosion control activities, and perform monitoring and evaluation of road obliteration and sediment reduction procedures.
- Fish Screens – Analyze and Improve fish screens on pumps and diversions within the 1855-treaty territory of the Nez Perce Tribe.

d. Project history (for ongoing projects)

The Nez Perce Tribe worked in the upper reaches of this watershed during the 1996-97 early action watershed program funded by Bonneville Power. The project was directed toward reclaiming raw soil and stabilize the affects of historic placer mining. The mine was abandoned without mitigation and as a result large amounts of sediment was delivered to spawning and rearing habitats downstream This project was coordinated with the Nez Perce National Forest (NPNF) and was accomplished using Bonneville Power funding and cost share dollars from NPNF. The contracts through which it was funded include the Nez Perce Tribal Early Action Watershed Program contract #96-FC-6846, while the Forest Service contract number was FS #97-CA-006. The cost share agreement involved a total budget of $79,630. The Forest Service contributed $45,981 while the Nez Perce Tribe contributed the remaining $33,649. This agreement involved developing a sediment trap and revegetation of a large, abandoned placer mine. This sediment trap was designed to prevent sediment delivery for the next 50 years while revegetion of the mine slope continues. Although this is the most recent, other efforts began in 1984 when the Forest Service began sediment abatement using small sediment traps, terracing, fencing and planting shrubs and grasses to control sediment yield. These traps filled rapidly and off-site disposal of the material has reached its capacity. The Forest Service did continue their efforts by continuing the channel monitoring and beginning a watershed assessment that will be completed during 1999. They have also done instream work during the 1980's using structural and non-structural approaches, but the channels generally were left in the location and pattern that remained after the dredge mining. Thus, it is unlikely that long term habitat objectives can be met (USDA Forest Service, 1998). These structures and channel morphology will be addressed throughout this project's life span.

e. Proposal objectives

Objective 1: Alleviate sediment input and potential input from road obliteration.

- Ten miles of forest and jammer roads obliterated. The obliteration will stabilize roads, reducing the high risk of landslides and surface erosion.

Objective 2: Perform monitoring and evaluation of road obliteration.

- Use photopoints to determine revegetation success.
- Measure sediment delivery using the forest sediment model and cobble embeddedness studies.
- Measure hydrological data using Rosgen methodology.

Objective 3: Design channel rehabilitation for the upper reach.

- Subcontract to complete feasibility study on channel restructuring.
- Create a list of priority reaches that need to be addressed to enhance the channel hydrology.

Objective 4: Disseminate information about work in the watershed.

- Four quarterly reports on project progress as they become due.
- End of the year final project report.
- Necessary presentations to the public and project peers.
- Update, finalized Challenge Cost-Share Agreement to be used for the restoration work within the Newsome and surrounding watersheds between the Nez Perce National Forest and the Nez Perce Tribe.

f. Methods

According to the agreement, the NPNF will provide planning, technical support and onsite contract administration. This includes the identification and prioritization of roads that are no longer needed on the forest transportation system and are presently or have the potential for mass wasting or adding sediment into creeks from surface erosion. In addition, the NPNF will provide for the obliteration of additional miles of road and continue to fund restoration of identified flood damage throughout the watersheds. Under the agreement, the tribe will provide funding for the excavator and operator, and purchase of erosion control supplies. The Tribal Fisheries/Watershed Program will also provide the inspector(s) and erosion control crews to perform the on-the-ground work. The Tribal Fisheries/Watershed Program and the NPNF will also work cooperatively on a monitoring and evaluation program of road obliteration practices and overall measure of success over time.

Upon completion of road identification and prioritization by the NPNF, road survey identification will begin. The survey will use the Watershed Improvement Needs (WIN) inventory, which has been adopted by the NPNF. This survey gathers information needed for road obliteration, along with other watershed problems in a log format. Data collected include, beginning point of survey, distance between sites, inlet and outlet of drainage structures, depth of fill, width of the road, length of any through fills, lengths and widths of failing and failed areas, any potential access problems, and total length of the road. Distances are generally measured using a hip chain but may also be estimated, wheeled from a map, or picked off the odometer of an all terrain vehicle or truck. In addition, any tributary roads are also logged. Overall problems associated with the roads are identified and the road is recommended for abandonment or obliteration. Road obliteration coordinators then use this information to determine the level of obliteration needed, and estimate of the volume of fill at risk of failing. Upon completion of this process, all involved parties meet and finalize road obliteration decisions (NPNF, 1998).

Road obliteration practices vary depending on the history of slides and other erosion problems associated with the road, the land type the road is on, and its proximity to fish bearing streams. Most roads require combinations of practices associated with the four road obliteration levels.

- Level 1 Obliteration: Roads have shallow culverts with few large road fills, on gentle terrain with few stream crossings. Practices used to obliterate these roads include: (1) Road surface decompaction or scarification; (2) removal of culverts; (3) minor outsloping or cross draining; (4) full raconteur or earth barrier at road approach to prevent motorized access; (5) revegetation of disturbed soils using native planting in combination with mulching and fertilizer.
- Level 2 Obliteration: Roads have a mix of shallow and deeper culverts and larger fills on moderate terrain with some stream crossings. These roads may also have small bogs or seeps that may threaten fillslope stability. Practices to obliterate these roads typically include all practices described for level 1 obliteration plus: (1)-removing fills at risk of failure; (2) Obvious or frequent out-sloping and cross draining.
- Level 3 Obliteration: Roads have numerous deep culverts and larger fills on steep terrain with many stream crossings. These roads often have small bogs or seeps that may threaten fill-slope stability. Practices to obliterate these roads typically include all practices described for level 1 and 2 obliteration plus: (1) removal of all deep culverts and associated fills; (2) fill removal and slope restoration to near original contours as possible on slopes at risk.
- Level 4 Obliteration: Conditions along these roads vary widely. They may occur on extremely steep terrain with numerous, deep culverts. They may also occur within degraded riparian habitats within 300 feet of fish bearing streams. These roads represent direct and often chronic risk of degrading fish habitat and water quality. These roads are obliterated by completely removing the fill and restoring slopes to as near natural contours as feasible.

Hydrological data will be gathered using Rosgen stream monitoring methodology. This methodology involves monitoring multiple aspects of the stream including substrate, channel classification, longitudinal profiles, cross sectional profiles, and width to depth ratios (Rosgen, 1996). All of the data collected must be done over an extended period of time and at a permanent sight to establish trends. This monitoring will show us if the work being done within the watershed is having any affect on the overall health of the stream. Substrate will be monitored in two main ways. The first technique will measure the amount of cobble embeddedness within the substrate. With this measurement you can determine whether if the amount of sediment coming through the system is effectively flushed out by stream flows. The second technique is to measure the type of substrate within the system. This will allow you to classify the stream and determine what the proper functioning level of the stream should be. The Rosgen classification system involves placing the particle sizes into categories from 1-6, one being bedrock and the size decreasing to six which is a silt/clay substrate (Harrelson, et.al. 1994). The next technique, channel classification, developed to put rivers and streams into categories based on geomorphic differences. This process lead to a four level system of inventory

and assessment that vary from a broad geomorphic characterization down to very specific descriptions (Rosgen, 1996). The next component of this model is a longitudinal profile measurement. A longitudinal survey establishes the elevation of the existing water surface, channel bottom, bankfull stage, floodplains, and terraces. It then determines their slope through the study reach (Harrelson, et.al. 1994). Measuring channel cross-sections is the next area of the Rosgen model. A cross-section is the location for measuring channel form, stream discharge, particle size distribution, and other long-term work (Harrelson, et.al. 1994). The final area of interest is width/depth ratio. This is the key to understanding the distribution of available energy within a channel, and the ability of various discharges occurring within the channel to move sediment (Rosgen, 1996). The hydrological data will be used to create a good picture of what is happening within the watershed and help identify limiting factors within the watershed.

g. Facilities and equipment

The facilities and equipment to be included in this program includes:

- Computer – Pentium II- 400 MHz, 128 SDRAM, 6.4 GB, 32x CD-ROM, 15" monitor, and multimedia capabilities.
- Vehicle – Use of a four-wheel drive GSA vehicle to get equipment and personnel into areas of work.
- Survey equipment – We will be using both laser and conventional levels to complete our stream monitoring activities. The supporting equipment for the monitoring will include cam-line measuring tape, regular measuring tape, measuring rod, and data collection form.
- Facilities – Use of the office in Lapwai with access to both professional and support staff. We will also have use of office equipment to accomplish the objectives within this project.

h. Budget

The *Rehabilitate Newsome Creek Watershed Project* is a continuing project from 1996-97 Early Action Watershed projects. We are going to obliterate roads within the watershed as well as survey other roads to continue the efforts for future years in the watershed. A more aggressive approach on two monitoring and evaluation (M&E) programs has also been included to this project proposal for 2000. These programs are needed to improve techniques and procedures for an increase in overall success and a program to measure road obliteration success over time. An explanation of each budget section is given below for the 2000-year budget.

PERSONNEL: Salaries have been calculated using the pay schedule for the Nez Perce Tribe, and are based on estimated time frames to complete the proposed work per objective. The road survey inventory crew will consist of three employees, the project leader, a technician II, and a technician I. From past experience, it is expected for this crew to need five weeks to complete this work. The road obliteration crew will consist of six employees to include; project leader (inspector), technician III (inspector), 2 technician II (erosion control), 2 technician I (erosion control), and 2 aides (erosion

control). It has been estimated to take 11 weeks to complete the proposed road obliteration work. The project leader, and the technician III will primarily complete all consulting with the Nez Perce National Forest (NPNF), objective 2, 3, and 4.

FRINGE BENEFITS: Fringe benefits are calculated using the Nez Perce Tribal standards. Fringe benefits equal 14% of tax-exempt employees (tribal) and 24 % of non-tax exempt employees (non-tribal).

SUPPLIES, MATERIALS, NON-EXPENDABLE PROPERTY: All costs are estimated on the amount of proposed work and past experience on what will be need to complete the job. Most of the field supplies, and the program already owns materials. This category included all in-house and field needs to include; office supplies (paper, pens, etc.), gloves, 2 field vests, 2 seeders, 2 string boxes, ATV ramp, and film.

TRAVEL: The project area is approximately 110 miles from the main office in Lapwai, ID. This section covers lodging costs and field per diem for all training and on-the-ground work.

INDIRECT COSTS: Indirect costs are based on Nez Perce Tribal standards. This cost equals 22.9% of personnel, travel, vehicles, and supplies and materials.

SUBCONTRACTOR: This section includes the cost for excavator rental/operator and erosion control supplies. Excavator/operator costs are based on current going rates (with a small inflation increase) and the amount of time it is expected to complete the proposed miles in the given terrain and level of obliteration. Erosion control supplies are based per mile to include mainly; erosion control blankets, seed, fertilizer, and staples. We are also going to complete a feasibility study on recontouring reaches of the stream that was adversley impacted by historic mining activities in the watershed.

OTHER (VEHICLE COSTS): This cost includes two vehicles to be leased from GSA and estimated costs for vehicle and ATV's repairs and service. Two vehicles will be needed to transport employees, ATV's, supplies, and materials.

Section 9. Key personnel

Felix M. McGowan
Nez Perce Tribal Watershed Coordinator
1.0 FTE

Education: 1994 – B.A. in Biology – Gonzaga University Spokane, WA

Current Responsibilities: Coordinate all activities within the Nez Perce Fisheries, wildlife, water resources, and cultural resources. These activities are to include habitat, research, and production as it relates to watershed management, coordinate with

cooperating agencies, work with interdisciplinary teams, inventory and evaluate habitat conditions, and coordinate riparian protection and restoration efforts.

Relevant Training:

- Riparian Proper Functioning Condition Training, 1998, Bureau of Land Mgmt.
- Integrated Ecosystem Watershed Management Workshop, 1998, OSU
- Road Obliteration Training, 1998, USDA Forest Service
- Introduction to GIS with ArcView 3.0a. 1998, BIA
- Applied Fluvial Geomorphology, 1998, Wildland Hydrology
- Coldwater Fish Culture, 1998, U.S. Fish & Wildlife Service

Previous Employment:

- May 1997 – present: *Nez Perce Tribal Fisheries/Watershed*
  Nez Perce Watershed Coordinator
- August 1994 – April 1997: *North Idaho College*
  Multicultural Academic Advisor

Expertise:

- Felix has a broad educational base in the natural sciences that allows an understanding of different natural processes. The training he has received over the past year has greatly increased his understanding in fisheries and hydrological sciences. These are two of the most important sciences involved in watershed work.

Relevant Job Completions:

- 1) Squaw Creek Stream Survey, 2) Squaw Creek Road Obliteration, 3) Lapwai Creek Watershed Assessment, 4) Johnson Creek Restoration Review, 5) Big Canyon Creek Watershed Assessment.

Ira Jones
Clearwater Subbasin Focus Coordinator
Habitat/Watershed Manager
1.0 FTE

Education: University of Montana, Missoula, MT
Major: Wildlife
Attendance: September 1973- June 1974

Current Responsibilities: Planning and implementation of Early Action Watershed Projects, analyze programs, laws, policies related to watershed management, facilitate development of criteria to identify critical fisheries habitat, develop a system to apply criteria to watershed for project development and administration, prepare and plan documents for watershed habitat coordination, provide educational presentation and

workshops for watershed management and proposal development, and provide assistance to project proponents with proposal development, implementation, monitoring and assessment.

Previous Employment:

- March 1997 – present: *Nez Perce Tribal Fisheries/Watershed* Habitat/Watershed Manager
- June 1986 – March 1997: *United States Forest Service, Region 1* Tribal Government Program Manager
- December 1980 – June 1986: *United States Forest Service, Region 1* Facilities Manager
- July 1974- October 1979: *United States Forest Service, Region 1* Fire Cache Work Leader

Relevant Job Completion:

- Coordinated National, Multi-Regional, and Regional Civil Rights Conferences, 2) Facilitated treaty rights workshops with host tribes and multi-governmental agencies, 3) Organized and conducted Tribal Relations Training primarily for management level from the U.S. Forest Service, Tribes, Bureau of Land Management, and bureau of Indian Affairs, 4) Introduced, implemented, and managed the Inter-tribal Youth Practicums for career in natural resources and leadership within the Forest Service Regions 1, 5, 9, and 10. 5) Developed an intergovernmental Personnel Act (IPA) position to work with the Salish Kootenai College to teach environmental science courses and develop a four-year natural science curriculum at the college. This three-year position and the program developed into a four-year accredited degree program in the fall of 1996.

We are also going to use staff from the Center for Environmental Education at Washington State University in our work within the watershed. The following individuals are the lead personnel from the university.

Shulin Chen
Department of Biological Systems Engineering, Washington State University
Matching Funds Contribution

Education: 1991 – Ph.D. Cornell University, Ithaca, NY
1981 – B.S. The Agricultural University of Hebei, Baoding, China

Current Reponsibilities/ Relevant Job Completions: Dr. Chen is in charge of both teaching and research projects for Washington State University. His teaching responsibilities include water quality, watershed management, natural systems for wastewater treatment, and aquacultural engineering. While his research projects include

natural systems for agricultural wastewater treatment for USDA, a problem solving tool for mitigating the impact on water quality of management practices in small rural watersheds for USGS, wet detention pond for highway runoff control for NCHRP, and systems approach for watershed management for USDA.

Previous Employment:

- October 1995 – present — Assistant Professor, W.S.U.
- November 1992 – Sept. 1995 — Research Assistant Professor, L.S.U.
- January 1990 – Nov. 1992 — Post-doctoral Researcher, L.S.U.

Expertise:

- Dr. Chen brings an expertise in water quality and management issues. This expertise will be used to review water quality information and help to apply this data to our work within this project. He also has expertise in environmental engineering which will help us in the design of instream and riparian structures.

Darin Saul
Director, Center for Environmental Education at Washington State University
Matching Funds Contribution

Education: 1996 – Ph.D. Washington State University, Pullman, WA.
1991 – M.A. Portland State University, Portland, OR
1987 – B.A. University of Washington, Seattle, WA

Current Responsibilities/Relevant Job Completions: Dr. Saul is the Director for the Center for Environmental Education and our leasion with WSU. He is currently working on the assessment model that will be used for Watershed Assessments completed by the Nez Perce Tribe. His experience in scientific writing and past watershed management publications will be invaluable in our efforts to establish a coprehensive document.

Experience:

- Director, Center for Environmental Education. — 1996 – present
- Project Manager, Developing a Research Track In General Education Curriculum. — 1997 – present
- Associate Director, WSU Preservice Teacher Environmental Literacy Project. — 1996 – present
- Coordinator, Environmental Projects Program — 1995 – 1996
- Adjunct Faculty at WSU — 1997 – present
- Instructor and Teaching assistant — 1990 - 1997

Publications:

- *A Next Step for Environmental Education: Thinking Critically, Thinking Culturally.* Accepted at The Journal of Environmental Education. Submitted February 1997.

- *Paradise Creek Watershed Water Quality Management Plan.* Co-written with Bruce Davis and the Paradise Creek Management for Washington Department of Ecology.
- "Intercultural Identity in James Welch's *Fools Crow and The Indian Lawyer*." American Indian Quarterly. Winter 1996, 1-6.

Section 10. Information/technology transfer

Technology transfer will be accomplished through four different mediums. The first and most important is the use of Streamnet to document work done within the watershed. The second medium is through the tribal fisheries newsletter, Salmon Tales. This is a newsletter that is distributed within the northwest to both tribal and non-tribal groups. The final two areas are through public reviews required by BPA and also the quarterly and annual reports that will be written to fulfill our contract obligations.

Congratulations!